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ABSTRACT

A transmission diffraction grating body including a base material being substantially transparent with respect to wavelength $\lambda 1$ and having a refractive index n0; another base material being substantially transparent with respect to wavelength \(\lambda \)1 and having a refractive index n1, which is formed on the base material having a refractive index n0; and a relief diffraction grating formed on the base material having a refractive index n1; wherein the refractive indexes n1 and n0 satisfy the relationship: n1 > n0. Thus, the base material having a refractive index n1 can be formed of a high refractive index material, and when the depth of grating of the diffraction grating is set so that the diffraction grating diffracts the light with wavelength $\lambda 1$ and does not diffract the light with wavelength $\lambda 2$, the depth of grating of the diffraction grating can be made to be shallow, thus preventing the loss of the amount of the light with wavelength $\lambda 1$. Furthermore, since base materials each having a different refractive index are bonded to each other to form a diffraction grating body, it is possible to minimize the use amount of the relatively expensive material having a high refractive index. Furthermore, since the most of the diffraction grating body can be formed of a material having a low refractive index, it is possible to lower the height of the diffraction index body.